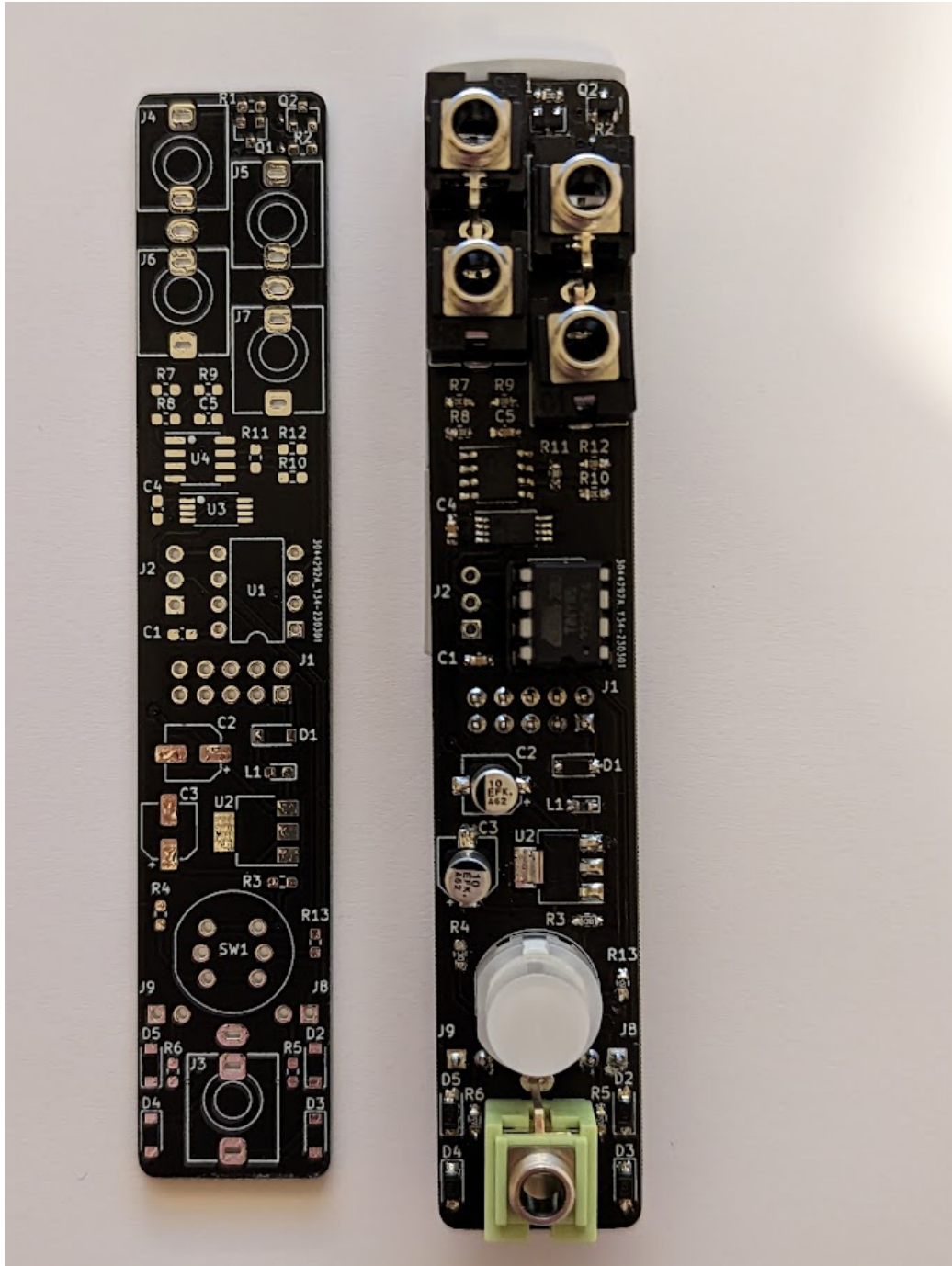


nQuencer DIY Build Guide

Building the nQuencer module involves surface mount soldering using 0603 components and is therefore not recommended unless you have experience with similar projects.

Aside from soldering tools you will require a multimeter to calibrate and suitable equipment to program the microcontroller if you didn't purchase one with your PCB.



BOM

Qty	Ref	Value	Footprint	Part
3	C1, C4, C5	100nF	C-USC0603	885012206071
2	C2, C3	10uF	CPOL-USB	EEE-FK1E100R
2	R1, R2	100K	R-US_R0603	RC0603FR-07100KL
3	R3, R9, R12	1K	R-US_R0603	RC0603FR-071KL
3	R4, R7, R10	10K	R-US_R0603	RC0603FR-0710KL
3	R5, R6, R13	4.7K	R-US_R0603	RC0603FR-074K7L
2	R8, R11	20K	R-US_R0603	RC0603FR-0720KL
1	U1	ATTINY85	PDIP-8	ATTINY85-20PU
1	U2	REG1117	SOT-223	AZ1117CH-5.0TRG1
1	U3	MCP47FEB22A0	TSSOP-8	MCP47FEB22A0-E/ST
1	U4	MCP6002	SOIC-8	MCP6002T-I/SN
2	Q1, Q2	MMBT3904	SOT-23	MMBT3904,215
1	D1	BAT54	SOD-123	BAT54WHE3-TP
4	D2, D3, D4, D5	1N4148	SOD-123	1N4148W-7-F
1	L1	Ferrite	WE-CBF_0603	742792664
1	SW1			D6RLRDF1 LFS
1	J1	Power Header	M05X2PTH	67996-410HLF
1	J3	Thonkiconn Stereo		PJ366ST
4	J4, J5, J6, J7	Thonkiconn		PJ398SM
2*	J8, J9	1x2 Header		M20-9774046
1		8 Pin DIP Socket		DILB8P-223TLF
2		Jumpers for J8, J9		M7582-46

* Order single 40 pin header and break off 2x 2 pin sections

Recommended Order

Headers J1, J8 and J9 are placed on the back of the PCB (the side with the 'nQuencer' text). All other components are placed on the front of the PCB.

1. Start with U3 and U4 - dots on silkscreen match dots on the parts (pin 1)
2. Add the remaining SMD parts - lines on diodes match the lines on the silkscreen
3. Add headers J1, J8 and J9 to the bottom of the PCB
4. Add SW1 - flat edge on the silkscreen matches flat edge on switch
5. Add the socket for U1 before adding the programmed ATTINY85 to the socket - the dip on the silkscreen matches the dip on the chip (towards the bottom of the PCB)
6. Place J3 to J7 (pairs of jack sockets share ground holes), add the front panel, solder one pin of each socket and then remaining pins when happy with the placement
7. Attach jumpers to J8 & J9

After completing your build, use a multimeter to calibrate the outputs using the process described in the user manual.

Firmware Programming

If you didn't purchase a programmed ATTINY85 microcontroller with your PCB you will need to program the firmware yourself. If you don't have a suitable programmer you can use an arduino and a few simple parts (search 'arduino program attiny85'). Download the firmware from the nQuencer website and be sure to program it using the Internal 16Mhz clock speed.